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Introduction

Thank you for the opportunity to share my views regarding the various global warming legislative proposals currently pending before the Congress. My name is Emily Figdor, and I am the director of the Federal Global Warming Program at Environment America. Environment America is the new home of U.S. PIRG's environmental work. We are a federation of state-based, citizen-funded environmental advocacy organizations.

Twenty years ago this summer, NASA scientist James Hansen appeared before Congress to warn the American people of the dangers posed by global warming. Today, thousands of families in the Midwest are struggling to recover from devastating floods. The extreme rainstorms that caused those floods have become more common over the last 60 years,[i] and scientists predict they will become even more common in a warming world.[ii]

The juxtaposition of those two events reminds us that inaction has consequences. It is vital, therefore, that we listen to what scientists, including James Hansen, are telling us today. They say that the United States and the world must begin reducing global warming pollution now, and achieve steep reductions soon, if we hope to avoid the most catastrophic impacts of global warming.

Achieving those emission reductions will be an historic challenge. But America has what it takes to rise to that challenge. We have the resources, the ingenuity, and the creativity to lead the world in the effort to combat global warming – while at the same time making America more energy independent, reinvigorating our economy, and creating good new jobs here at home.

To get there, however, we need a roadmap. The global warming legislation that Congress ultimately adopts must be that roadmap, showing how America can achieve the deep reductions in global warming pollution that will be needed to prevent catastrophic impacts from global warming.

My testimony today outlines three basic principles for strong, effective, and fair federal global warming legislation and provides an overview of how well five major House and Senate bills fulfill those principles.

The three principles are as follows:

First, the legislation must be strong enough to get the job done, meaning that it must incorporate domestic emission reductions consistent with those the science tells us are necessary to prevent the worst impacts of global warming. This is especially important in the near term because the longer we delay the more difficult and costly reductions will be in the future.

Second, the legislation must accelerate the transition to a clean energy economy. Capping global warming pollution while subsidizing polluters is like gunning the engine of the car while riding the brake. By contrast, smart climate policies that pair a carbon cap with investments in clean energy technology and infrastructure can shift America's energy transition into high gear.

Finally, the legislation must maximize the benefits of our investments in clean technologies and minimize societal costs.

These three principles are consistent with a more detailed statement of principles circulated to the House by three members of this subcommittee, Representatives Waxman, Markey, and Inslee, in April 2008. The Waxman-Markey-Inslee principles have garnered more than 80 signatures to date from other members and interest from additional members, as well as the support of Environment America and the broader environmental community. We commend the Congressmen for this important contribution.

Principle 1: Action Must Be Sufficient to Prevent Dangerous Global Warming
The United States has already committed, as a signatory to the 1992 United Nations Framework Convention on Climate Change, to the goal of "[s]tabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[iii] Many scientists and policymakers have identified a 2° C rise in global average temperature over pre-industrial levels (which is equivalent to 3.6° F or about 2° F over today's levels) as a rough threshold between damaging and catastrophic global warming.[iv]

According to the Intergovernmental Panel on Climate Change (IPCC), to have a reasonable chance of keeping global temperatures from rising by more than 2˚C, the atmospheric concentration of global warming pollutants (in carbon dioxide equivalent) must not rise higher than 450 parts per million (ppm).[v] Leading climate scientists, such as James Hansen, believe that even this level of pollution may be too much. They argue for a target of returning concentrations of global warming pollutants to 350 ppm.[vi] Given that the concentration of global warming pollutants is already 375 ppm and rising every year, the need for strong action is immediate.[vii]

To stabilize carbon dioxide levels between 445 and 490 ppm (carbon dioxide equivalent), <u>global</u> emissions must peak no later than 2015 and decline by 50 to 85 percent below 2000 levels by 2050.[viii] The United States must:

- stabilize total U.S. emissions at or below today's levels immediately;

- reduce total U.S. emissions by at least 15 to 20 percent below today's levels by 2020; and
- reduce total U.S. emissions by at least 80 percent by 2050.[ix]

Of course, the United States cannot solve global warming on its own. But let's be clear: these emission reduction targets – 15 to 20 percent by 2020 and 80 percent by 2050 – presume similarly strong action by other developed countries and action by developing nations such as China and India. In other words, these emission reductions represent the level of cuts that must be made right here at home.

We also need to help kick-start emission reductions in other countries through mechanisms such as international forest protection. But none of these efforts minimize the need for immediate and ultimately deep cuts in domestic global warming emissions.

Principle 2: Action Must Accelerate the Transition to a Clean Energy Economy
America is on the cusp of a clean energy revolution – a revolution that will transform our economy from one dependent on dirty, dangerous, and unstable sources of energy to one that is clean and energy efficient.

This clean energy revolution is happening all across America. Texas has added 4,000 megawatts of wind power to its grid in the last decade alone. New Jersey has doubled the amount of solar power on its rooftops in just the last two years. More than 4,000 megawatts of solar thermal power are scheduled to be built in the deserts of the American southwest over the next several years. And states like Vermont are using energy efficiency to meet an ever-growing share of their electricity needs – indeed, last year, Vermont used energy efficiency to completely offset the growth of electricity demand in the state and did so at a quarter of the cost of buying power.[x]

Yesterday, Environment America released *Global Warming Solutions that Work*, a report detailing more than 20 examples of cutting-edge policies and practices that communities, states, and countries are using to reduce global warming pollution. Innovative and common sense practices like these, and many more like them, are being replicated across the country.

But much more needs to be done. America has enormous potential to save energy through improved efficiency and to tap the vast resources of the sun and wind to power our economy. For example, a 2006 Environment America report found that by achieving five technologically feasible targets for energy efficiency and renewable energy development (along with keeping emissions of non-carbon dioxide global warming pollutants constant), the United States could reduce its total global warming emissions by 19 percent below 2004 levels by 2020 (see Table 1).[xi]

Table 1. Global Warming Emission Impacts in 2020 of Selected Energy Targets (Relative to 2004 Emissions)[xii]

Strategy	**Savings $MMTCO_2E$**
Stabilize Vehicle Travel	0*
40 MPG Fuel Economy and Heavy-Duty Truck Fuel Economy Standards	383
10% of Transportation Fuel from Renewables	61
10% Reduction in Energy Consumption	400
20% of Electricity from New Renewables	511
Total Savings	**1355**
2004 U.S. Global Warming Emissions	7122
Reduction Relative to 2004	**19%**

* Avoids increase in emissions resulting from projected increases in vehicle travel between now and 2020.

The long-term goal of achieving an 80 percent reduction in total U.S. global warming emissions also is feasible, given an aggressive push to improve energy efficiency and expand the production of renewable energy in the United States.[xiii]

The only thing we need to fuel this clean energy revolution is a clear and consistent signal from the federal government. Adoption of a strong cap on global warming pollution will unleash the creativity of American scientists and entrepreneurs to develop new technologies to reduce emissions. At the same time, however, the architecture of a carbon cap must accelerate, rather than hinder, the transition to a clean energy economy.

By investing the revenues from auctioning emission allowances under a cap-and-trade program in energy efficiency programs and research, development, and deployment of renewable energy and energy efficiency technologies, we can accelerate our transition to a new energy future. On the other hand, distributing allowances to polluting industries will hinder that transition and make it more difficult and more costly for America to achieve the required levels of emission reductions.

We also need additional policies to accelerate the transition to a clean energy economy. Those policies include:

- Strong energy efficiency standards for vehicles and appliances.

- Strong building energy codes designed to improve the efficiency of homes and businesses. The federal government also should encourage the construction of green buildings and zero-energy buildings that go "beyond code" and should adopt measures to encourage or require the use of small-scale renewable energy technologies like solar water heaters, geothermal heat pumps, or solar panels on new residential and commercial buildings.

- Renewable electricity standards that will ensure that America gets at least 25 percent of its electricity from renewable sources by 2025.

- Energy efficiency resource standards for electric and gas utilities that require that energy efficiency improvements play an important role in meeting future energy needs.

- Transportation and land-use policies that provide Americans with viable alternatives to driving by encouraging the development of compact, walkable neighborhoods where automobile use is an option, not a requirement.

- Policies to reduce global warming pollution and promote sustainable practices in other parts of the economy, including policies to encourage recycling, efficient use of water, sustainable agriculture, more energy efficient industrial practices, and to reduce emissions of global warming pollutants other than carbon dioxide.

Principle 3: Action Must Maximize Benefits and Minimize Costs
Any response to global warming will have an impact on American families. All Americans will benefit from a cleaner and more efficient economy that is less dependent on foreign oil. But some families may also experience increased burdens.

It is important, therefore, that any climate policy is designed to maximize the benefits American families will reap in terms of cleaner air, improved energy efficiency, and greater energy independence, and minimize the costs they experience in terms of higher energy bills.

To use our resources most effectively, any emission trading program used to comply with a global warming emission cap must auction, rather than give away, emission allowances, and use the proceeds of that auction to accelerate the transition to a clean energy economy and reduce the cost of the program to consumers.

Economic research shows that auctioning allowances (along with "recycling" some or all of the revenue from the auction back to the public) is a less expensive way to achieve emission reductions through cap-and-trade than a free distribution system. For example:

- A study by Resources for the Future estimated that an auction and revenue recycling approach was roughly half as expensive to society as an allocation system based on "grandfathering" of existing emitters. Total savings under the auction approach increase as emission-reduction targets become more stringent.[xiv]

- These results are supported by evidence from other economic modeling efforts suggesting that allowance auctions, combined with recycling of auction revenues, can allow for emission reductions at lower overall cost and possibly promote more innovation and better investments in technology.[xv]

The conclusion that auctioning allowances is less costly to society than giving them away seems to defy common sense. After all, consumers will mainly see the impact of a cap-and-trade system in higher prices for energy and some products. If polluters are given

allowances for free, one might think that they would not need to pass the cost of compliance down to consumers, thus saving consumers money.

However, economic research and practical experience show that giving away allowances to polluters represents the worst of both worlds. Consumers pay more for energy or products as the cost of those products comes to reflect the cost of global warming pollution – just as they would under a system in which allowances are auctioned. But instead of the government gaining revenues from allowance auctions, which could then be used in a variety of ways to reduce the cost of the program, *polluters* could benefit by receiving unjustified "windfall" profits – even if they take no action at all to reduce their global warming emissions.

Windfall profits are a real and significant concern. In the United Kingdom, for example, power producers have netted an estimated £1 billion (about $1.9 billion) in windfall profits through participation in the European Union's Emission Trading Scheme.[xvi]

By auctioning allowances, we can ensure that precious dollars are not siphoned away to unjustly pad the profits of Big Oil and other fossil fuel industries. At the same time, we can redirect those dollars toward the achievement of two important goals: helping Americans make the transition to a clean energy economy, and making that transition easier by returning some of the money to those who face the greatest burden from energy costs, particularly low-income consumers.

Overview of the Bills
The five bills that are the subject of today's hearing include the following:

- Safe Climate Act (H.R. 1590, introduced by Representative Waxman);
- Investing in Climate Action and Protection Act (H.R. 6186, introduced by Representative Markey);
- Climate Security Act (S. 2191, as reported out of the Senate Environment & Public Works Committee, introduced by Senators Lieberman and Warner);
- Boxer-Lieberman-Warner substitute to the Climate Security Act (S. 3036); and
- Low Carbon Economy Act (S. 1766, introduced by Senators Bingaman and Specter).

I will turn first to the House bills and then to the Senate bills.

Safe Climate Act and Investing in Climate Action and Protection Act
The Safe Climate Act and Investing in Climate Action and Protection Act (iCAP) meet the three principles for strong, effective, and fair climate legislation.

Of the five bills, the Safe Climate Act, which was the first of these bills to be introduced in the Congress, has the strongest science-based framework. It is the only bill that covers all U.S. global warming emissions. It sets emission-reduction targets and then establishes different regulatory programs to achieve those reductions. An analysis by the World Resources Institute indicates that the cumulative emission reductions required by the bill are consistent with the goal of stabilizing the atmospheric concentration of global warming pollutants near 450 ppm.[xvii]

Importantly, both the Safe Climate Act and the iCAP bill include mechanisms for periodically reviewing developments in the science and promptly adjusting the program if the latest science shows that we are not on track to avoid dangerous global warming.

The Safe Climate Act would accelerate the transition to a clean energy economy by establishing an energy efficiency resource standard, renewable electricity standard, and global warming emissions standards for vehicles. And it envisions auctioning, rather than giving away, emission allowances, and using the auction proceeds to maximize the public benefits and minimize the effect of any energy cost increases to consumers, though the bill does not set forth a detailed plan for achieving these important objectives.

The iCAP bill provides the most detailed road map for transitioning America to a clean energy economy, while protecting American consumers.

The bill auctions 94 percent of the emission allowances at the start of the program and 100 percent by 2020. It dedicates a substantial portion of the auction revenue to energy efficiency, while also establishing energy efficiency standards, which will reduce the costs of the policy. It invests in the research, development, and deployment of renewable energy technologies and in the low-carbon infrastructure and human resources that will be needed to successfully fight global warming, such as through green jobs training programs.

In addition, the iCAP bill returns more than half of the proceeds of the auction to low- and middle-income households to help compensate for any increase in energy costs as a result of the legislation. This will compensate all increased energy costs due to the policy for households earning under $70,000 (66 percent of U.S. households) and will provide benefits to all households earning up to $110,000 (more than 80 percent of U.S. households).

Climate Security Act, Boxer-Lieberman-Warner Substitute, and Low Carbon Economy Act

We commend Senators Boxer, Lieberman, Warner, Bingaman, and Specter for their dogged work to advance global warming legislation. The Lieberman-Warner Climate Security Act and the Boxer-Lieberman-Warner substitute include many provisions that attempt to address the principles I have outlined. The bills have much stronger emission-reduction targets than any bill ever voted on by the Senate, and, for the first time, a bill considering auctioning a substantial portion of the pollution allowances was put before the Senate for a vote. However, these bills do not adequately fulfill the three principles.

Given the primacy of the need to assure real emission reductions consistent with what science says is necessary, I will focus my testimony on this fatal shortcoming in these bills.

Of the three bills, the Lieberman-Warner Climate Security Act has the strongest emission-reduction targets (see Table 2); in particular, the bill has an ambitious 2020 target to reduce total U.S. emissions by 21 percent below 2005 levels by 2020. Unfortunately, the bill aims to reduce total U.S. emissions by just 65 percent by 2050, not the 80 percent demanded by the science. The Bingaman-Specter Low Carbon Economy Act has the weakest emission-reduction targets of the three bills. The pollution caps and incentives in the bill would reduce total U.S. emissions by an estimated 3 percent below 2005 levels by 2020 and by 22 percent by 2050.[xviii]

Table 2. Comparison of Emission-Reduction Targets in the Five Global Warming Bills (from 2005 baseline)[xix]

	Percent of Total U.S. Emissions Covered	Emission-Reduction Target for Covered Sources, 2020	Emission-Reduction Target for Covered Sources, 2050	Estimated Reduction in Total U.S. Emissions, 2020*	Estimated Reduction in Total U.S. Emissions, 2050*
Safe Climate Act (H.R.1590)	100%	1990 levels	80% below 1990 levels	14%	83%
Investing in Climate Action and Protection Act (H.R. 6186)	cap-auction-and-invest program covers 87%, additional coverage from other regulatory programs	20%	85%	21%	75%
Climate Security Act (S. 2191), as passed by the Senate Environment & Public Works Committee	87%	19%	71%	21%	65%
Boxer-Lieberman-Warner Substitute to Climate Security Act (S. 3036)	82%	19%	71%	14%**	60%**
Low Carbon Economy Act (S. 1766)	87%	2006 levels	1990 levels	3%**	22%**

* These estimates reflect the emission-reduction targets in the bills, growth in uncovered emissions, and potential additional emission reductions that could occur from incentives and complementary policies in the legislation. The estimates assume that offsets will be real, permanent, and additional.

** These estimates do not include the potential impact of the cost containment auction in the Boxer-Lieberman-Warner substitute or the price cap in the Low Carbon Economy Act.

In addition to the problems with these emission-reduction targets, all three bills include mechanisms that threaten to undermine the ability of the legislation to achieve even these targets. The mechanisms include a price cap, or so-called "safety valve," in the Bingaman-Specter Low Carbon Economy Act, a cost containment auction in the Boxer-Lieberman-Warner substitute, and large-scale offsets programs in all three bills.

These three mechanisms are designed to contain costs. However, there are other ways to contain costs in cap-and-trade programs that will enhance – rather than jeopardize – the environmental integrity of the legislation. An analysis conducted for the Regional Greenhouse Gas Initiative (a regional, power sector cap-and-trade program that includes 10 northeastern states) shows that increasing investments in energy efficiency can significantly reduce allowance prices as well as overall increases in energy prices that result from the cap-and-trade program.[xx] A wise U.S. climate policy would provide a policy framework that incorporates improved energy efficiency standards for equipment, the removal of non-market barriers to energy efficiency improvements, and vigorous financial support for energy efficiency (financed from revenues from allowance auctions), which would reduce the cost of compliance with the program while preserving its environmental integrity. The Markey iCAP bill takes this approach.

- Price cap

The Bingaman-Specter Low Carbon Economy Act includes a price cap, which would allow emitters to pay a set price for emission allowances if the price set by the market exceeds a certain level. Price caps erode the environmental integrity of the program by allowing emissions to exceed the limits in the bill. In addition, the economic risks posed by global warming are significant and severe. Price caps do nothing to reduce the overall economic costs of addressing global warming but merely shift the costs from today to future years, since increased emissions now will require steeper emission cuts in the future.

- Cost containment auction

The Boxer-Lieberman-Warner substitute borrows 6 billion tons of emission allowances from the future (2030-2050) and allows companies to buy them at a set price in the early years of the program. The availability of these additional allowances in the early years of the program significantly jeopardizes the ability of the bill to deliver the near-term reductions in emissions demanded by the science. Considering the impact of this provision as well as the offsets program in the bill, Joseph Romm, a former senior official at the Department of Energy and a fellow at the Center for American Progress, commented that "the most likely outcome of this bill is that U.S. energy-related CO2 emissions in 2025 would be about the same as they are now, and possibly higher."[xxi]

- Large-scale offset programs

All three of these bills include large-scale domestic and international offsets programs. Offsets allow emitters covered by a carbon cap to comply by paying for emission reductions at facilities or for activities not covered by the program. Offsets are problematic because they provide less-certain reductions in emissions, thus eroding the environmental integrity of the program, and because they reduce the potential for the American people to receive the "co-benefits" of domestic emission reductions, such as cleaner air and improved energy security.

There is a fundamental difference between offsets and emission allowances. Allowances represent units of pollution emitted – they can be accurately measured and tracked. Offsets represent units of pollution *not emitted*. To determine whether an emission

reduction achieved through an offset is equivalent to an allowance, one must know not only how much pollution was emitted from the source receiving the offset, but how much pollution *would have been emitted* had the offset not been issued. This is difficult, if not impossible, to know with certainty.

A recent report by Stanford University on international experience with offsets concluded that "any [domestic or international] offset market of sufficient scale to provide substantial cost-control for a cap-and-trade program will involve **substantial issuance of credits that do not represent real emissions reductions**" (emphasis added).[xxii]

The widespread use of offsets, particularly international offsets, reduces the amount of emission reductions that occur domestically. To the extent that many of the nation's largest emitters of carbon dioxide are also among its largest emitters of health-threatening air pollution and most profligate consumers of fossil fuels, allowing offsets reduces the potential for climate policy to drive simultaneous improvements in air quality and energy security. Indeed, international offsets result in American consumers paying for capital improvements in other nations' industrial and energy systems.

While the Markey iCAP bill includes an offsets program, it incorporates rigorous limitations and standards to maintain the environmental integrity of the bill.

Conclusion

Global warming poses a profound threat to our future. The science is clear that we must begin reducing global warming pollution now, and achieve steep reductions soon, if we hope to prevent catastrophic effects of global warming. In the United States, we must cut domestic emissions by at least 15 to 20 percent by 2020 and by 80 percent by 2050.

Achieving those emission reductions will be an historic challenge. However, in responding to this challenge, there is also opportunity – if we act quickly and sensibly – including reduced dependence on fossil fuels, cleaner air and healthier communities, and new jobs. Congress should develop legislation that embodies the principles I discussed today to accomplish these goals.

Thank you for the opportunity to present these views. I look forward to working with the subcommittee and full committee to help craft strong, effective, and fair global warming legislation.

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